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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/726,298
Filing Date: December 01, 2003
Appellant(s): MICHELITSCH ET AL.

Andrew T. Harry
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 07/12/2010 appealing from the Office action mailed 11/27/2009.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

Claims 15-28 are pending and rejected by the final office action.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has one comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. **The reference of Fedorovskaya** et al. was identified in the Brief filed 07/12/2010 under the grounds of rejection on appeal section VI. (see page 4, bottom) as 20030156305. However, the actual reference number is 20030156304. The response below follows with the assumption Appellant is aware of the correct reference number.

Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION." In this Examiners answer, no new grounds are presented or rejections withdrawn.

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

Lee et al. U.S. Publication No. 20030234799

Fedorovskaya et al. U.S. Publication No. 20030156304

Stern et al. U.S. Publication No. 20020047828

Good, L., Bederson, B. B., Stefik, M., Baudisch, P. (April, 2002). "Automatic Text Reduction for Changing Size Constraints", pp. 798-799 (See 892, copy provided with this examiner answer)

Kuga et al. U.S. Patent No. 5,686,940 A

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 15–16, 19–22, and 25 are rejected under 35 U.S.C. 103(a) for being obvious over by *Lee* (U.S. Pre-Grant Pub. 2003/0234799 A1) in view of *Fedorovskaya* (US 2003/0156304 A1) and *Stern et al.* (US 2002/0047828 A1).

As to independent **claim 15**, *Lee* describes a method for operating a display device ("...display apparatus 10 ...," para. [0040]), comprising: generating user position information of a user in relation to a display of said display device ("...distance between the display apparatus 10 and a user...," para. [0030]), wherein said user position information is descriptive of a distance of the user with respect to said display ("...according to the distance between a user and the display...," para. [0029]); changing a display mode for displaying information on said display depending on said user position information ("...sensed by the distance sensor 11 and adjusts a size of an image on the

basis of the read image displaying ratio data...," para. [0029]), wherein in said display mode an amount of said displayed information depends on said user position information ("...displaying ratio data storage part 3 according to the distance between a user and the display apparatus ...," para. [0029]); and displaying said information on said display based on said display mode ("...displaying ratio data, and an image displaying ratio setting ...," para. [0029]; See also see S9 of Fig. 2).

It should be noted, *Lee* differs from claim 15 in that:

1) *capturing an image of a user;*

2) *measuring an eye distance between a right eye and a left eye of the user in the image;*

3) *generating user position information of the user in relation to a display of said display device based on the eye distance;* and

4) *deriving a view angle of the user with respect to the display from said image of and the view angel is compensated for* are not clearly shown.

Fedorovskaya is cited for the teaching of capturing an image of a user ("...recording one or more of the following signals using physical or bio-metrical devices...," para. [0025]); measuring an eye distance between a right eye and a left eye of the user in the image ("...The distance between the person's eyes...," para. [0055]); generating user position information of the user in relation to a display of said display device based on the eye distance ("...depends on the distance of the user to the video camera...," para. [0055]), wherein said user position information is descriptive of a distance of the user with respect to said display ("...The distance between the person's eyes is used to account for this dependency...," para. [0055]).

Stern et al. taught deriving a view angle of the user with respect to the display from said image of ("order to determine the correct viewing angle for the individual.," para. [0043]) and the view angel is compensated for ("The image size or view size on the user's screen will also adjust automatically in accordance with the direction of monitor display movement. The mechanical apparatus also preferably will control the height of the monitor and the viewing angle of the monitor," para. [0044]).

> It would have been obvious to one ordinary skill in the relevant field at the time the invention was made to use distance determination through the *eye distance measurement* taught in *Fedorovskaya,* with the *Lee* because: *Fedorovskaya* identifies that a variety of methods can be used to determine distance between a user and a video camera and that eye distance measurement is one method known in the art to be a suitable equivalents for that purpose. According to *Fedorovskaya*, eye distance measurement is taught to be a known alternative:
>
> [t]he specified image divided by the distance between the person's eyes. The distance between the person's eyes is determined using the facial recognition algorithms mentioned above. The necessity of taking the ratio between the size of the mouth and some measure related to the head of the person (e.g. the distance between the eyes) stems from the fact that the size of the mouth extracted from the video frame depends on the distance of the user to the video camera, position of the head, etc. The distance between the person's eyes is used to account for this dependency, however, other measures such as the height or width of the face, the area of the face and others measures can also be used…

(para. [0055]). Furthermore, one skilled in the art, having common knowledge and common sense, would reasonably be expected to draw the inference from *Stern et al.* that displaying at least one display item could depend on user position information to determine "…the optimal viewing distance." (para. [0023]).

As to dependent **claims 16**, which depends from claim 15, *Lee* further discloses "...According to the first embodiment of the present invention, the video card 7 can be controlled by a video card control program such as a text size adjusting function of a control board provided in the operating system....," para. [0033]: If a user is in a first position (closer distance) with respect to the display the information includes an amount of text that is larger than what it would be if the user was in a second position (farther distance) with respect to the display. See Figures 5 and 6, reproduced below.

FIG. 5

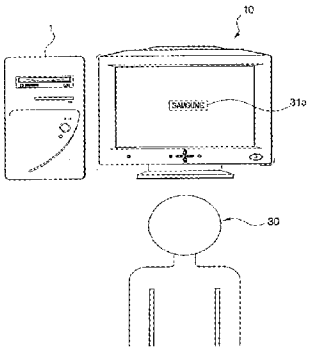
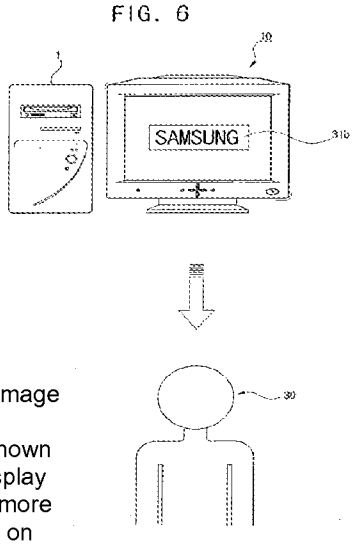


FIG. 6



FIGS. 5 and 6 illustrate the size of an image according to the distance between the display apparatus 10 and a user. As shown therein, if the distance between the display apparatus 10 and a user 30 becomes more distant, the size of an image displayed on the display apparatus 10 is enlarged (refer to a change from 31a of FIG. 5 to 31b of FIG. 6), so that the image can be easily seen by a user. In contrast, if a user 30 moves closer to the display apparatus 10, the size of the image displayed on the display apparatus 10 is reduced. (*Lee*,

As to independent **claim 19**, this claim differs from claim 15 only in that it is directed to a computer readable medium defined by the process of claim 15. *Lee* describe, ("...the present invention provides a method for adjusting an image size of a display apparatus, a system for the same, and a media for recording a computer program therefor, in which

the size of an image is automatically adjusted according to a change of a distance between the display apparatus and a user....," para. [0043])(emphasis added) . Accordingly, this claim is rejected for the same reasons set forth in the treatment of claim 15, above.

As to independent **claim 20**, *Lee* further describes: a display device comprising: a display configured to display information ("...this configuration, an image such as a letter, a picture, etc. displayed on a display apparatus is automatically enlarged/reduced according to a change of a distance between the display apparatus and a user, so that the user can see the image easily regardless of the distance between the display apparatus and himself/herself....," para. [0042]). Therefore this claim is rejected under for the additional reasons set forth in the treatment of claim 15.

As to dependent **claims 21–22**, which depends from claim 20, *Lee* further describes: a display device comprising: a display configured to display information ("...displayed on a display apparatus...," para. [0042]). Therefore this claim is rejected under for the additional reasons set forth in the treatment of claims 16 and 17, respectively.

As to dependent **claim 25**, which depends from claim 24, *Lee* further shows picture elements (e.g. see Figs. 5 and 6 above).

Claim 28 is rejected under 35 U.S.C. 103(a) for being obvious over *Lee* (U.S. Pre-Grant Pub. 2003/0234799 A1) in view of *Fedorovskaya* (US 2003/0156304 A1) as applied to claim 15 above and further in view of *Stern et al.* (US 2002/0047828 A1).

As to dependent **claim 28**, *Lee* taught the limitations addressed in the treatment of claim 15, above. Specifically, a method for operating a display device ("provided on a display apparatus", Abstract), comprising: generating user position information of a user in relation to a display of said display device ("distance between the LCD 1 and the upper half of the user's body is detected," col. 3, *L*ines 24-30), wherein said user position information is descriptive of a distance of the user with respect to said display ("whether the upper half of the user's body is near the LCD 1 or far from the LCD 1 is detected. " col. 3, *L*ines 24-30), changing a display mode for displaying information on said display depending on said user position information ("display of a moving image is made according to the detected distance." col. 1, *L*ines 59-63), wherein in said display mode an amount of said displayed information depends on said user position information and displaying said information on said display based on said display mode ("The changeover between the enlargement and the reduction of an image and between the scrolling and the stopping of a text and between the moving display and the stationary display of a moving image is made according to the detected distance." col. 1, *L*ines 59-63).

However, *Lee* fails to clearly disclose a saturation of a color for displaying at least one of the display items depending on the user position information.

Stern et al. is cited for teaching a saturation of a color for displaying "...In accordance with yet another embodiment of the present invention, a user may be presented with color tests ...," para. [0013]) at least one of the display items depending on the user position information ("...Additionally, system 10 preferably measures a user's "amplitude of accommodation," which is generally defined as the minimum distance

between the eye and a viewing surface below which the surface is blurry. Such a test for amplitude of accommodation preferably is performed by having the user lean forward until the screen becomes fuzzy. While the user is at this distance where the screen has become fuzzy, the user clicks the mouse and the software measures the distance to the user via the distance sensor 16....," para. [0027]).

It would have been obvious to one ordinary skill in the relevant field at the time the invention was made to use distance determination through the *eye distance measurement* taught in *Fedorovskaya,* with the *Lee* because: *Fedorovskaya* identifies that a variety of methods can be used to determine distance between a user and a video camera and that eye distance measurement is one method known in the art to be a suitable equivalents for that purpose. According to *Fedorovskaya*, eye distance measurement is a known alternative, see above.

It would have further been obvious to one ordinary skill in the relevant field at the time the invention was made to use a saturation of a color for displaying at least one of the display items depending on the user position information. one skilled in the art, having common knowledge and common sense, would reasonably be expected to draw the inference from *Stern et al.* that a saturation of a color for displaying at least one display item could depend on user position information to determine "…the optimal viewing distance." (para. [0023]).

Claims 17, 24, and 26-27 are rejected under 35 U.S.C. 103(a) for being obvious over by *Lee* (U.S. Pre-Grant Pub. 2003/0234799 A1) in view of *Good, L.*, *Bederson*, B. B.,

Stefik, M., Baudisch, P. (April, 2002). Automatic Text Reduction for Changing Size Constraints pp. 798-799 ("*Good*") and *Fedorovskaya* (US 2003/0156304 A1).

As to claims **17, 24, and 26-27**, *Lee* further disclosed (see claim 16 above) rephrasing through omission (i.e. "...According to the first embodiment of the present invention, the video card 7 can be controlled by a video card control program such as a text size adjusting function of a control board provided in the operating system....," para. [0033]): If a user is in a first position [closer distance] with respect to the display the information includes an amount of text that is larger than what it would be if the user was in a second position [farther distance] with respect to the display.

Lee differs in that re-phrasing is not clearly shown. *Good* teaches rephrasing on computer displays (p.1) when size constraints dynamically change p.1, see also fig. 1, reproduced below:

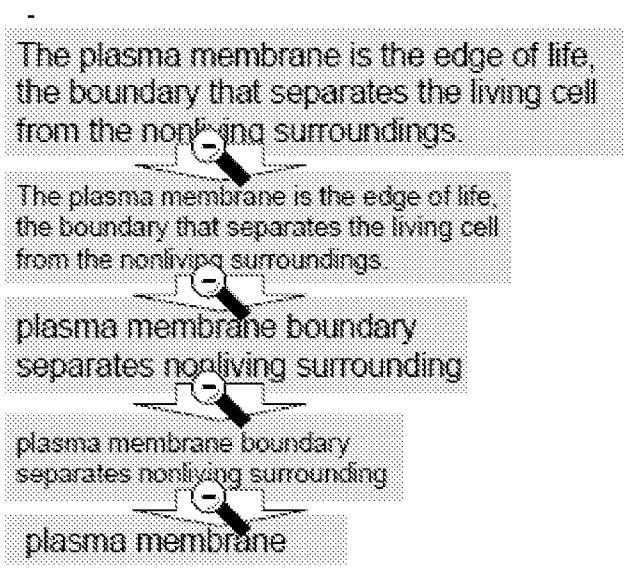


Figure 1: The text reduction technique used in our prototype. This technique automatically shortens text and reduces font size in order to meet the user's space reduction request.

Good is cited for teaching rephrasing automatically upon change ("…the system automatically replaces the current representation with a shortened version of the text at the original font size.," *See* page 2).

It would have been obvious to one ordinary skill in the relevant field at the time the invention was made to use the rephrasing as taught by *Good,* as claimed, with the method and device of *Lee* because re-phrasing is recognized to be a solution that is advantageously suitable for the problem changing space requirements ("We believe that scalable text, in addition to increasing practical screen size, has the potential to assist users in abstraction. Using reduction techniques such as eliminating common words may help users to more easily identify patterns such as rare, recurring key words or related concept terms. " ; *Good*, Page 2).

Lee differs from claim 15 in that *capturing an image of a user; measuring an eye distance between a right eye and a left eye of the user in the image; generating user position information of the user in relation to a display of said display device based on the eye distance,* is not clearly shown.

Fedorovskaya is cited for the teaching of capturing an image of a user ("...recording one or more of the following signals using physical or bio-metrical devices...," para. [0025]); measuring an eye distance between a right eye and a left eye of the user in the image ("...The distance between the person's eyes...," para. [0055]); generating user position information of the user in relation to a display of said display device based on the eye distance ("...depends on the distance of the user to the video camera...," para. [0055]), wherein said user position information is descriptive of a distance of the user with respect

to said display ("...The distance between the person's eyes is used to account for this dependency...," para. [0055]).

It would have been obvious to one ordinary skill in the relevant field at the time the invention was made to use distance determination through the *eye distance measurement* taught in *Fedorovskaya,* with the *Lee* because: *Fedorovskaya* identifies that a variety of methods can be used to determine distance between a user and a video camera and that eye distance measurement is one method known in the art to be a suitable equivalents for that purpose. According to *Fedorovskaya*, eye distance measurement is a known alternative:

> [t]he specified image divided by the distance between the person's eyes. The distance between the person's eyes is determined using the facial recognition algorithms mentioned above. The necessity of taking the ratio between the size of the mouth and some measure related to the head of the person (e.g. the distance between the eyes) stems from the fact that the size of the mouth extracted from the video frame depends on the distance of the user to the video camera, position of the head, etc. The distance between the person's eyes is used to account for this dependency, however, other measures such as the height or width of the face, the area of the face and others measures can also be used…

(para. [0055]).

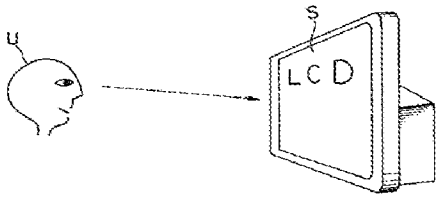
Claims 18 and 23 rejected under 35 U.S.C. 103(a) as being unpatentable over *Lee* (U.S. Pre-Grant Pub. 2003/0234799 A1) in view of *Kuga* (U.S. Patent No. 5,686,940 A) and *Good, L.*, Bederson, B. B., Stefik, M., Baudisch, P. (April, 2002). Automatic Text Reduction for Changing Size Constraints pp. 798-799 ("*Good*") and *Fedorovskaya* (US 2003/0156304 A1).

As to dependent **claim 18**, which depends from claim 15, *Lee* taught the limitations addressed in the treatment of claim 15, above. Specifically, a method for operating a display device ("provided on a display apparatus", Abstract), comprising: generating user position information of a user in relation to a display of said display device ("distance between the LCD 1 and the upper half of the user's body is detected," col. 3, *L*ines 24-30), wherein said user position information is descriptive of a distance of the user with respect to said display ("whether the upper half of the user's body is near the LCD 1 or far from the LCD 1 is detected. " col. 3, *L*ines 24-30), changing a display mode for displaying information on said display depending on said user position information ("display of a moving image is made according to the detected distance." col. 1, *L*ines 59-63), wherein in said display mode an amount of said displayed information depends on said user position information and displaying said information on said display based on said display mode ("The changeover between the enlargement and the reduction of an image and between the scrolling and the stopping of a text and between the moving display and the stationary display of a moving image is made according to the detected distance." col. 1, *L*ines 59-63). However, *Lee* fails to clearly disclose that the information includes a first amount of semantic content in a first position, or a second amount of semantic content in a second position.

Kuga teaches that in a first position varying the amount of text based upon the distance from a LCD, ("...the upper half of the user's body is moved away from the LCD 1 to perform the high-speed scrolling, and when a desired part of the displayed image is approached, the upper half is slightly moved toward the LCD 1 to perform the low-speed

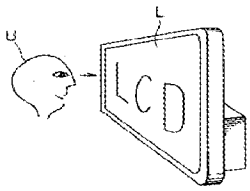
scrolling. When the desired part is displayed, the upper half is further moved toward the LCD 1 to stop the scrolling.," col. 4, *L*ines 50-59) wherein said first position represents a closer position to said display than said second position and said first amount of semantic content is larger than said second amount of semantic content.

FIG. 2



For example, in Fig. 2 the distance between a user U and the LCD 1 is long, so that a reduced image S is displayed on the LCD 1 (col. 3, lines 37-45).

FIG. 3



For example, in Fig. 3 the distance between the user U and the LCD 1 is short, so that an enlarged image L is displayed on LCD 1 (col. 3, lines 37-45).

Lee and *Kuga* don't clearly show the information including a first amount of semantic content in a first position, or a second amount of semantic content in a second position. *Good* is cited for teaching changing the text amount (semantic content) on computer displays (e.g. p.1) when size the constraints dynamically change, see also fig. 1, reproduced below:

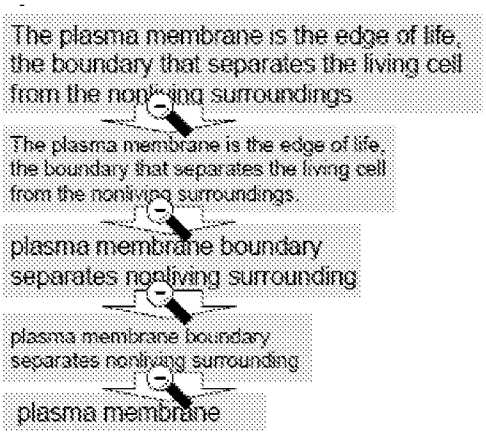


Figure 1: The text reduction technique used in our prototype. This technique automatically shortens text and reduces font size in order to meet the user's space reduction request.

Good automatically changes the semantic content upon the size changes ("…the system automatically replaces the current representation with a shortened version of the text at the original font size.," *Good*, Page 2).

It would have been obvious to one ordinary skill in the relevant field at the time the invention was made to have used the resizing method taught in *Good,* as claimed, with the method and device of *Lee* and *Kuga* because *Kuga* and *Lee* are further directed to the same problem of adjusting the size of an image automatically according to a change of a distance between a display apparatus and a user[1]. Also, the teachings in *Kuga* provide a motivation for using the method taught by *Lee* (i.e. the font size is continuously increased when increasing the distance between a user and a display and that the font size is continuously decreased when decreasing the distance between a user and a display). Further, *Kuga* expressly suggests the that the manual process of changing displays is

[1] Thereby, the change of display is made by a very natural movement of the viewer that the upper half of the body is moved forward or backward." col. 1, line 65 -to- col. 2, line 3 *Kuga*.

cumbersome and inefficient especially for handicapped people (including those with visual impairments):

> The change of displays is usually made by the user by operating an input means[.] However, when the display modes are changed by such operations, delay is readily caused in the man to machine interface, and the operations themselves are complicated. In addition, the operations are sometimes very difficult for physically handicapped people. (*Kuga*, col. 1, *L*ines 31-46).

Good also is directed to and suggests assisting users, "We believe that scalable text, in addition to increasing practical screen size, has the potential to assist users in abstraction. Using reduction techniques such as eliminating common words may help users to more easily identify patterns such as rare, recurring key words or related concept terms. " (*Good*, Page 2).

It should be noted, *Lee* differs from claim 15 in that capturing an image of a user; measuring an eye distance between a right eye and a left eye of the user in the image; generating user position information of the user in relation to a display of said display device based on the eye distance, is not clearly shown.

Fedorovskaya is cited for the teaching of capturing an image of a user ("...recording one or more of the following signals using physical or bio-metrical devices...," para. [0025]); measuring an eye distance between a right eye and a left eye of the user in the image ("...The distance between the person's eyes...," para. [0055]); generating user position information of the user in relation to a display of said display device based on the eye distance ("...depends on the distance of the user to the video camera...," para. [0055]), wherein said user position information is descriptive of a distance of the user with respect

to said display ("...The distance between the person's eyes is used to account for this dependency...," para. [0055]).

It would have been obvious to one ordinary skill in the relevant field at the time the invention was made to use distance determination through the eye distance measurement taught in *Fedorovskaya*, with the *Lee* because: *Fedorovskaya* identifies that a variety of methods can be used to determine distance between a user and a video camera and that eye distance measurement is one method known in the art to be a suitable equivalents for that purpose. According to *Fedorovskaya*, eye distance measurement is a known alternative:

> [t]he specified image divided by the distance between the person's eyes. The distance between the person's eyes is determined using the facial recognition algorithms mentioned above. The necessity of taking the ratio between the size of the mouth and some measure related to the head of the person (e.g. the distance between the eyes) stems from the fact that the size of the mouth extracted from the video frame depends on the distance of the user to the video camera, position of the head, etc. The distance between the person's eyes is used to account for this dependency, however, other measures such as the height or width of the face, the area of the face and others measures can also be used…

(para. [0055]).

As to dependent **claim 23**, this claim differs from claim 18 only in that it is directed to a product defined by the process of claim 18. Accordingly, this claim is rejected for the same reasons set forth in the treatment of claim 18, above.

(10) Response to Argument

Beginning on page 5 of Appellant's brief (hereinafter Brief) Appellant argues specific issues, which are accordingly addressed below. Applicant has elected to group the following claims together and the Examiner will present arguments based on the elected groupings.

First, it is noted that a new examiner has been assigned to the application and the Examiner that examined the case to final rejection is different than the current Examiner.

Second, it is noted that Appellant has not presented arguments for claims 17-18, 23-24 and 26-27, but argues that claims 17-18, 23-24 and 26-27 depend from claim 15 and 20 and were rejected under Lee, Fedorovskaya and Stern, thus the rejection should be reversed for the same reasons (See Brief page 9, middle). However, the Final Rejection reveals that claims 17, 24, 26-27 were rejected under Lee, in view of Good in further view of Fedorovskaya. Therefore, the grounds of rejection are different and not addressed in the Brief. Further, claims 18 and 23 were rejected under Lee in view of Kuga in further view of Good, which also presented a different grounds of rejection and no arguments were presented in the Brief. Thus the reasons argued by Appellant for dependent claims 17-18, 23-24 and 23-27 appear to be incorrect, as the Final rejection clearly outlines a different grounds of rejection for claims 17-18, 23-24 and 23-27.

In light of the lack of arguments and a different ground of rejection in the Final rejection, these claims appear to not be contested by Appellant and the comments below will not include any further comment on this.

Third, it is noted (also mentioned above) that the Grounds of Rejection section VI. Refers to Fedorovskaya as reference number 20030156305, which is incorrect. The correct reference number for Fedorovskaya is 20030156304.

Argument A, 1a

Claims 15, 19 and 20: deriving a view angle based on a captured user image

Appellant's argument that the Advisory Action asserts the claims do not require a feature

Appellant argues that the Advisory Action mailed 02/19/2010 presents an incorrect argument that "the broadest reasonable interpretation of the "deriving of a view angle ... from a captured image" actually does require a previously captured image (See Brief page 5, bottom).

The Examiner respectfully disagrees.

The issue at hand appears to be determining if the statement made by the previous examiner is correct or incorrect.

In the analysis of the argued claim 15, the first limitation recites “capturing an image of a user.” The argued limitation in the advisory action and the Brief is the “deriving a view angle of the user with respect to the display from **said image …**". The limitations appear to recite a feature of deriving the angle “while”

capturing the image. The claim does not outline a timing aspect of the method where the steps occur at a certain time and does not state using a “captured or previously captured image” in the past tense. For example, Appellants position appears to be that the claim should be construed that the “capturing, measuring, generating, and deriving limitations occur in order", where the image is first captured and then it is measured and the users position and viewing angle are derived from a captured image.

However, in review of present application the phrase “capturing an image” is not mentioned. The closest recital of capturing an image appears to be within (Para 44) of the present application specification, which states:

[0044} Video Analysis: The distance between the left and right eye is roughly constant at about 60 mm for all humans, children having a somewhat smaller distance. By detecting the face in a **video picture shot by a camera mounted on top of the display**, it can be inferred how far away the eye pair is from the camera by the distance of the detected eye balls in the picture through elementary geometric calculations. Video tracking of faces and eyes is obviously known, it is unclear whether the use of eye ball distance for distance estimation is known or not.

Using the definition above, and the claim, a reasonable interpretation appears to be that the claim states "capturing an image" and not captured image. The "deriving the angle from… "said image" also does not say captured image. The “deriving limitation” states deriving from said image, which appears to occur during the capturing process because the specification provides evidence that the detection is done on the video. Therefore it appears the steps are done

together on the same image, and not an image captured and then analyzed, as argued and the examiners statements appear to be consistent with the present application specification and the broadest reasonable interpretation of the claim because the claim appears to recite a process of "deriving the angle of viewing… ", during the **capturing** of the image.

Appellant's second argument that Lee, Stern and Fedorovskaya do not read on claim 15

Appellant argues that Stern, Lee and Fedorovskaya do not read on claim 15 because they do not interpret Stern as disclosing a) a leveling device that derives a viewing angle of the user from a captured image and b) LED's are unsuitable for capturing an image of the user or capturing an image. Thus, Stern cannot derive a view angle with respect to the display from an image of the user because it uses an LED (See Brief page 6).
The Examiner respectfully disagrees.

First, the Final rejection mailed 11/27/2009 states the following for the argued limitations:

"*Stern et al.* taught deriving a view angle of the user with respect to the display from said image of ("order to determine the correct viewing angle for the individual.," para. [0043]) and the view angel is compensated for ("The image size or view size on the user's screen will also adjust automatically in accordance with the direction of monitor display movement. The mechanical

apparatus also preferably will control the height of the monitor and the viewing angle of the monitor," para. [0044]).

It would have been obvious to one ordinary skill in the relevant field at the time the invention was made to use distance determination through the *eye distance measurement* taught in *Fedorovskaya,* with the *Lee* because: *Fedorovskaya* identifies that a variety of methods can be used to determine distance between a user and a video camera and that eye distance measurement is one method known in the art to be a suitable equivalents for that purpose. According to *Fedorovskaya*, eye distance measurement is taught to be a known alternative:

> [t]he specified image divided by the distance between the person's eyes. The distance between the person's eyes is determined using the facial recognition algorithms mentioned above. The necessity of taking the ratio between the size of the mouth and some measure related to the head of the person (e.g. the distance between the eyes) stems from the fact that the size of the mouth extracted from the video frame depends on the distance of the user to the video camera, position of the head, etc. The distance between the person's eyes is used to account for this dependency, however, other measures such as the height or width of the face, the area of the face and others measures can also be used…

(para. [0055]). Furthermore, one skilled in the art, having common knowledge and common sense, would reasonably be expected to draw the inference from *Stern et al.* that displaying at least one display item could depend on user position information to determine "…the optimal viewing distance." (para. [0023]).

Thus, it is clearly noted that the rejection did not just reject the limitation alone on the teaching of Stern Para 43, as a suggestion to combine is used as well as Para 44, in Stern. The rejection reasoned that the suggestion in Fedorovskaya suggested that distance can be determined by facial recognition algorithms and "the extracted measure of persons head depends on the distance of the user from the video camera and other measures of Height or Width of the face **can be**

used, to which Stern Para 43 and 44 were relied upon, as a suggested teaching reference.

Second, as stated above, the claim appears to recite that the “capturing of the image” limitation in claim 15 and the “deriving of the viewing angle of the user from “said image”” limitation appear to occur while capturing the image and not from a previously captured image. To this, the examiner refers to the response above as to whether the claim recites a "captured image or not"

Third, the rejection to Stern uses not just Para 43 as argued. **Appellant neither mentions the obvious combination used in the rejection nor mentions Para 44 or suggested features of Stern.** The rejection states that the Para 44 also teaches a feature of “adjusting the viewing angle of monitor” to control the height of the monitor while adjusting the viewing size of the image. Fedorovskaya teaches the use of a camera to determine the distance of the user from the camera and the head of the user, as outlined in the final rejection (See page 5, bottom). Stern suggests the viewing angle of the monitor changes to accommodate visual changes of the day and can automatically adjust in accordance with the monitor display movement (See Para 44). Therefore, as argued by the examiner Fedorovskaya in view of Stern would use the camera of Fedorovskaya and the monitor adjustment and angle to determine the viewing angle of the user, as suggested in Stern.

Appellant also argues that LED's are unsuitable for capturing an image of the user or capturing an image and thus Stern does not provide the necessary teaching in the art to render the claims obvious because an LED cannot capture an image.

The examiner respectfully disagrees.

MPEP 2123 and 2144 state that a reference is available for all that it reasonably suggests to the skilled artisan " where the references are relevant for all that they contain" including the non-preferred embodiments and "it is proper to take into account the inferences which one skilled in the art would draw from within the references". In this case, Stern teaches a system (See Figure 1) that shows a Camera (16 and 40) along with a distance sensor. Stern states (Para 21) that many distance sensors "may be used" and may be arranged in various configurations. Stern states Para 29, that a camera or image sensor may be used to analyze the face, eyes and mouth. Stern uses the eye blink to analyze visual acuity, as the user's sit a normal working distance from the computer (See Para 30) by accurately measuring the eye distance from the computer (See Para 31). Stern suggests uses of real time measurement of viewing distance while vision testing, adjusting a pattern size image relative to viewing distance. Para 43, states that an LED may be used to level the device in order to determine proper positioning in front of the machine to determine the correct viewing angle and **additionally the machine can include** a mechanical apparatus to adjust the display screen (See Para 44). Thus Stern appears to teach and suggest

several sensor combinations and a system in Figure 1 that not only includes a distance sensor, but also a camera and image sensor and may also include an LED for leveling and a mechanical device for adjusting the monitor angle during the day by monitoring the user's position. Stern clearly teaches the use of the camera and the image sensor and the LED to determine distance, angle and viewing size of the image, and not just the LED. Therefore, the prior art of Stern suggests to the skilled artisan that the camera image sensor, LED and mechanical apparatus of Stern can be used to modify Lee to adjust the angle of the image for the purposes of tracking a users real time vision of a computer screen to alleviate eye strain and vision issues.

Moreover, the present application specification (See Para 64 below), teaches the use of a beam of light to determine the angle of incidence with a given point of reflection of the user, which stands in contrast to Appellant's argument.

[0064] In FIGS. 4A and 4B a possible measuring process as indicated by the steps S1 of FIG. 1 and T1 of FIG. 3 is explained in more detail. In FIG. 4A an object, namely a possible user U is situated comparable far at a comparable large distance dU before the display device DD having the display unit DU. In contrast, in the situation shown in FIG. 4B the object, namely the user U is situated comparable close at a comparable low distance dU before said display device DD and said display unit DU. In each case, **a beam of light is emitted from the display unit DU and the angle of incidence with respect to a given point of reflection onto the object or user U is measured** based on which angle the distances dU can be calculated. Where dU = distance of an object/possible user.

Appellant appears to argue that an "LED" is unsuitable for "using a captured image" to derive a viewing angle of the user. In direct contrast, the specification

conflicts with this argument as an expressed example is given of using a beam of light to determine the angle of incidence with a point of reflection onto the user to determine the angle of the user from the display and distance. Thus the examiner has interpreted the prior art and claims consistent with the specification and that would be known to one of ordinary skill in the art.

Argument A, 1b

Claims 15, 19 and 20: changing a display mode for displaying information.. to compensate for the viewing angle of the user

Appellant's argument that the combined prior art does not teach "changing the display mode for displaying information… to compensate for the view angle of the user because they interpret Lee as simply adjusting the viewers image based on the distance the user is from the screen and not changing the mode to compensate for viewing angle. Similarly, they argue that Stern does not remedy the deficiency in the claim because Appellant interprets Stern as not teaching changing the display mode to compensate for the viewing angle (See Brief Page 8).

The Examiner respectfully disagrees.

The present application specification does not appear to specify "how" the view angle is compensated. The specification states the use of a camera and other sensors (See Para 13) with the combination of other devices to change the display mode (See Para 14 and 18) where the view angle is compensated. Thus the specification outlines that the image is compensated for without showing

specifically the compensated display that is based on a derived viewing angle of the user. The only other Para that mentions changing a viewing angle is Para 64, where the angle of incidence with respect to a given point of reflection onto the user or object is measured, which appears to be shown in Fig. 4a -4b. The distance calculation appears to adjust to a higher angle the further away a user is from the screen and visa versa. However, this section describes measuring distance and not changing the display mode. Para 60 appears to state the display mode relates to the changing the size of the displayed content on the screen based on the proximity of the user to the screen. Therefore, without a specific example in the specification, the claims are to be interpreted with the broadest reasonable interpretation, as that would be understood by one of ordinary skill in the art.

The final refers to Lee for teaching that a (See Para 29) that the user and system use distance sensors and preference setting established by the user to adjust and change an image displayed on the screen. As outlined in the rejection, the examiner states the prior art of Lee does not teach compensating for viewing angle (See Page 4, item 4). Fedorovskaya teaches a camera that determines users distance from the screen by calculating the distance between a user's eyes and position of the head using facial recognition software and uses the information extracted from the video frame to determine distance of the user to the camera. Nonetheless, Fedorovskaya suggests using other measures that

depend on the users distance from the camera to adjust for the size ratio of the facial features and Stern is an example of the other measures.

Moreover, The present application states {0044] Video Analysis: The distance between the left and right eye is roughly constant at about 60 mm for all humans, children having a somewhat smaller distance. By detecting the face in a video picture shot by a camera mounted on top of the display, it can be inferred how far away the eye pair is from the camera by the distance of the detected eye balls in the picture through elementary geometric calculations. **Video tracking of faces and eyes is obviously known,** it is unclear whether the use of eye ball distance for distance estimation is known or not

Thus Appellant admits that the video tracking of faces and eyes is known to determine how far away a user is from the display. Thus known systems that track faces and eyes are admitted by applicant as known elements of the prior art.

Stern is an example of the known video tracking systems referred to in Appellants specification and an “other measuring system, as suggested in Fedorovskaya, as it includes a video camera, distance sensor and system for tracking a users position in front of a monitor for the intended purposes specified in Para 37. Further, The prior art of Stern teaches a system (See Figure 1) that shows a Camera (16 and 40) along with a distance sensor. Stern states (Para 21) that many distance sensors "may be used" and may be arranged in various configurations. Stern states Para 29, that a camera or image sensor may be used to analyze the face, eyes and mouth. Stern uses the eye blink to analyze visual acuity, as the user’s sit a normal working distance from the computer (See

Para 30) by accurately measuring the eye distance from the computer (See Para 31). Stern suggests uses of real time measurement of viewing distance while vision testing, adjusting a pattern size image relative to viewing distance. Para 43, states that an LED may be used to level the device in order to determine proper positioning in front of the machine to determine the correct viewing angle and additionally the machine can include a mechanical apparatus to adjust the display screen (See Para 44). Thus Stern appears to teach a system in Figure 1 that not only includes a distance sensor, but also a camera and image sensor and may also include an LED for leveling and a mechanical device for adjusting the monitor angle during the day by monitoring the user's position. Stern clearly teaches the use of the camera and the image sensor and the LED to determine distance, angle and viewing size of the image.

Therefore, the prior art of Stern suggests to the skilled artisan that the camera image sensor, LED and mechanical apparatus of Stern can be used to modify Lee to adjust the angle of the image for the purposes of tracking a users real time vision of a computer screen to alleviate eye strain and vision issues.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Steven B. Theriault/

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